

Gray, R. M. (2010). The Brooklyn Program: Applying NLP to Addictions. Current Research in NLP: Proceedings of 2008 Conference, 1(1): 88-98 (2010).

Prepublication version: this may differ significantly from the final published version. To order the final version as it appears in the Journal, please visit:

<http://www.anlp.org/spartcart/anlp-publications>

Abstract. From 1997 to 2004 the US Probation Department, EDNY, operated a 16 week, NLP-based program for offenders with various levels of substance use disorders (Gray, 2001, 2002). The program was based upon Jungian and Maslowian concepts of personal growth and development (Gray, 1996; Maslow, 1970; Proffoff, 1959; Zoja, 1996) and was closely tied to The Stages of Change Model and the work of James Prochaska (Prochaska, DiClemente & Norcross, 1994). It made use of standard NLP tools for the creation of: peak experiences—using submodality analysis, accessible resource states—using anchoring understood as a classical conditioning paradigm, and the well-formed outcome frame to instantiate Prochaska's preferred future. All changes worked to move the participant towards identifying and realizing an individualizing/self actualizing future. Later, the program was informed by research into the mechanisms of incentive salience in the midbrain dopamine system (Robinson & Berridge, 2001, Robinson, 2004). Through 2004, the program graduated more than 300 participants. 30 percent (29.6%) of participants who had previously tested positive for abused substances remained abstinent for one year following treatment. Statistical analyses showed that the NLP treatment obtained results that were equivalent to results obtained by participants in intensive outpatient treatment despite being much less expensive and much less time intensive—the program required two hours per week and periodic individual sessions. Positive affect, increased self efficacy and general participant satisfaction were hallmarks of the program completers (Gray, 2002).

The Brooklyn Program: Applying NLP to Addictions

The Brooklyn program operated as an in-house substance use treatment program for the Federal Probation office in Brooklyn, New York during the period between 1997 and 2004. It began by treating offenders with verified histories of marijuana abuse or addiction and clients with no significant personal direction and expanded to cover offenders with all levels of substance use disorders. Participants met in a group format with one or two facilitators for two hours once a week over the course of the program's 16 week span. The program is fully manualized.

The program was terminated in 2004 after a change in administration led to a recalculation of the Department's budget. In accordance with standard federal practice, and the new administration's application of those practices, the money that the Brooklyn Program had saved the Department could no longer be reprogrammed to other purposes and created a net decrease in funding. As a result, the Brooklyn Program and other money saving, in-house treatment modalities were terminated so that the Department could restore its funding.

After two years, a statistical analysis of results from 99 recent clients (1999) found that program completers did as well as clients who had been referred for standard intensive outpatient treatment, but at a significant savings to the government in time and money. The program is unique in that 1) It is non-confrontational and non-directive; the problem behaviors are for the most part never directly addressed. 2) It provides behavioral success criteria for each stage of the program so that facilitators can gauge participant performance. 3) Like coping strategy interventions, the program is focused on providing affective (feeling-based) tools for enhancing choice and personal transformation; unlike more standard programs clients are never instructed as to where the tools *should* be used.

Participants reported significant increases in positive affect, and self esteem as well as the government's savings in time and effort. Program completers were shown to have one-year abstinence rates of 29.6 % as verified by random urinalysis (Gray, 2001, 2002).

Background

The Brooklyn Program was designed to take advantage of depth psychological and humanistic hypotheses about human growth and development and their intersection with the Stages of Change Model set forth by James Prochaska and his colleagues (Gray, 1996, 2001, 2002, 2005, 2008; Prochaska, Norcross & DiClementi, 1994). More specifically, it was designed with the assumptions that:

1. Substance use disorders are, in general, about the subjective utility of abused substances and behaviors and their capacity to produce an immediate but ultimately false sense of self efficacy (Gray, 2001, 2002, 2005, 2008; Zoja, 1990).
2. The path to individuation / self actualization represents a more salient, more personally rewarding set of experiences that are capable of outframing the addictive urge in the short term and creating meaningful future outcomes in the long term (Gray, 1996. 2001. 2002, 2005).
3. In line with Prochaska's Strong Principle of Change, the identification of a more highly-valued future outcome predicts movement from precontemplation to action in the stages of change model (Prochaska, 1994; Prochaska, Norcross & DiClementi, 1994).
4. In line with Jungian assumptions about archetypal energies, meaningful, impactful future outcomes can be shaped by awakening a felt sense of personal identity—constellating the deep self—and using those felt experiences to create a set of outcomes that would meet

Prochaska's requirement for a motivating future outcome (Edinger, 1971; Gray, 1996. 2001. 2002, 2005, 2008; Hillman, 1996; Prochaska, 1994; Prochaska, Norcross & DiClementi, 1994).

5. In accordance with the work of Milton Erickson, later confirmed by Antonio Damasio, it was understood that present memories of past positive experiences could be used as resource states for acquiring the positive affect states that would drive the experiential base of the project (Erickson, 1954; Damasio, 1999).
6. Because, according to James Hillman, any affective state experienced on a sufficiently deep level may be understood as archetypal, the affective states used to awaken the felt sense of Self could be created and enhanced using simple conditioning procedures (Gray, 1996. 2001. 2002, 2005; Hillman, 1983).
7. The experiences that drive the change could be created using simple behavioral techniques derived from the Neuro-Linguistic Programming (NLP) tool set (Gray, 1996, 2001, 2002, 2005; Dilts, DeLozier & DeLozier, 2000).

The basic techniques used in the program were taken from the *NLP tool set*. Neuro-Linguistic Programming (NLP) is a set of tools comprising an epistemology, a methodology and a set of techniques rooted in a strategy for modeling human behavior developed in the mid 1970's by linguist John Grinder and Psychology graduate student Richard Bandler. Grinder, then assistant professor of Linguistics at the University of California, Santa Cruz, was inspired by the transformational grammar of Noam Chomsky. In his adaptation of transformational grammar, Grinder understood that the structure of both language and experience could be modeled in terms of sequences of sensory experience including what was seen, heard, felt, smelled or tasted: the Visual, Auditory, Kinesthetic, Olfactory and Gustatory (VAKOG) elements. When accurately

mapped, these sequences would provide the keys not only to modeling the subject behavior but also to modifying unwanted or un-useful behaviors (Bandler and Grinder 1975, 1979; Bostic St. Clair & Grinder, 2002; Dilts, Bandler et al., 1980; Dilts, DeLozier & DeLozier, 2000; Thomas Yeager, personal communication, 2007).

Bandler was described by Grinder as a natural therapist who had the unique skill of being able to learn and quickly master almost any psychotherapeutic technique. As their collaboration began, Bandler would experientially master a psychotherapeutic approach and together they would parse the more salient aspects of the techniques in terms of Grinder's model (Bostic St. Clair & Grinder, 2002).

At Bandler's urging, Grinder first applied his model to Fritz Perls' Gestalt Therapy. Over the next several years, Grinder and Bandler applied their modeling skills to the patterns and techniques of Virginia Satir, founder of conjoint Family therapy; Milton Erickson, often described as the father of modern hypnotherapy; and others. In the course of their researches they created a technique for modeling behavior, a series of tools of general therapeutic applicability and interventions for specific pathologies, learning problems and behavioral issues. This basic repertoire was enhanced significantly by the contributions of other early participants in the development of NLP including Robert Dilts, another of Grinder's graduate students; John and Connierae Stevens (Steve and Connierae Andreas), already well known in Gestalt circles; Leslie Cameron-Bandler, Judith DeLozier; David Gordon and Steven Gilligan (Bandler & Grinder 1975, 1979; Bostic St. Clair & Grinder, 2002; Dilts, Bandler et al., 1980; Dilts, DeLozier & DeLozier, 2000; Lewis & Pucelik, 1990; O'Connor & Seymour, 1990).

One of the end products of these efforts was a set of basic skills and techniques that may be thought of as the basic NLP tool kit. In general, they represent the elements of most NLP-

based interventions. According to Dilts et al. (2000) these include primary representational systems, accessing cues, sensory based predicates, the meta-model, pacing and leading, anchoring, reframing, change personal history, visual-kinesthetic dissociation and state management. For the purposes of this program, the crucial elements of the toolset are submodality analysis and manipulation, anchoring and well-formed outcomes.

Submodality analysis and manipulation is based on the idea that all subjective behavior can be analyzed into sequences of sensory experience; what we see, hear, feel, smell and taste. On a more finely-grained level, the valence, intensity and meaning of these experiences are determined by the qualities of the sensory experiences. These qualities include their subjective position, distance, intensity, amplitude, stability, focus, etc. The manipulation of these variables can intensify, weaken or change the meaning of an experience. For example, the image of a pleasant memory may be experienced as associated or dissociated, near or far, bright or dim, moving or still, two-dimensional or multi-dimensional, colored or mono-chromatic, etc. Similar dimensions of perception apply to the other senses. Each of these manipulations can change the subjective experience significantly and can, in combination, powerfully impact subjective experience. The scientific validity of submodality distinctions, especially in the visual modality, has been largely confirmed by mainline psychology but without reference to NLP (Andreas & Andreas, 1988, 1989; Bandler & MacDonald, 1987; Gray 2001, 2002, 2005, 2008, 2008a).

The second tool, anchoring, is a basic classical conditioning technique that is used to make the affects developed using submodality analysis transportable and manipulable by the client. In general, it consists of associating a predetermined--though nevertheless arbitrary--gesture as Conditioned Stimulus with a practiced ecstatic state (developed using submodality manipulation) as a Conditioned Response.

In NLP, anchoring can refer to almost anything from a gentle touch used as a conscious reminder, to a classically conditioned stimulus that evokes a specific, involuntary, emotional or visceral response. In the Brooklyn Program, anchoring is treated as a classically conditioned learning experience in which repeated pairings of a meaningless gesture with an emotional experience allow that gesture to elicit, and modify, the original emotional experience. These conditioned stimuli may be thought of as triggers for the desired responses. They are automatic and relatively immediate. Stacking anchors, an extension of anchoring as an instance of classical conditioning, allows the creation of new states and experiences by combining felt experiences (Gray 2001, 2002, 2005, 2008).

The third tool, well-formed outcomes, is a central pillar of Neuro-Linguistic Programming interventions that has developed more or less directly from the work of Noam Chomsky. Just as Chomsky held that native speakers of any language can intuitively identify whether a communication is well-formed or meaningful, just so, human behaviors require certain kinds of structure in order to make them meaningful, motivating or efficacious. Typically these conditions include the specification of the formal characteristics of the elements and their required order (Bandler & Grinder, 1975; Dilts et al., 2000; Dilts, Grinder et al., 1980; Gray, 2008; O'Connor & Seymour, 1990).

At their most basic level, the NLP well formedness conditions for any given outcome specify that:

1. It must be stated as a positive thing or experience; something wanted, not something unwanted or ended.
2. It must be something that is under the goal seeker's personal control which also implies that the task should not be stated too broadly.

3. It must be specified in terms of sensory experience; it must be described in terms of what can be seen, heard, felt, tasted or touched.
4. It must be evaluated in terms of its impact on the person's current life and the lives of the people around them (ecology).

(Bandler & Grinder, 1975; Dilts et al., 1980; O'Connor & Seymour, 1990; Dilts et al., 2000; Gray, 2008)

From these basic tools, the program built experiences of self efficacy with regard to affect, access to mood control, access to personal experiences of ecstasy and a core sense of personal identity and worth. That experience would serve as a foundation for the creation of an anticipated future that was sufficiently stable to provide motivation for change and personal transformation into the future, without regard to the underlying problem behavior.

Although founded on presuppositions grounded in humanistic and depth psychologies, it soon became apparent that the principles upon which the program depended could be expressed in terms of structures in the midbrain dopamine system. Significant correlations were noted between the assumptions of the program and the behavior of individual dopamine neurons (Schultz, 2002), the instantiation of salience hierarchies in the orbito-frontal cortex (a current review is presented in Kringelbach, 2005), and the differentiation between hedonic impact and incentive salience (Berridge & Robinson, 2003). Similar studies from the perspective of physiology provided a vertical integration of the hypotheses upon which the program was built and allowed for further refinements of the techniques employed.

Procedures

The program begins by turning away from a problem focus and emphasizes that the participants can learn to enhance their memory, feel better emotionally, gain control over their

emotions--choose how and when they want to feel differently, and finally, design a future that is meaningful to them. Beyond these outcomes, the only representation made to participants was that if they applied the techniques they would always leave the sessions feeling better than they did when they came in; if they didn't, it would be the most boring two hours of every week. Problems were deemphasized. In some cases, the program was presented as laying a behavioral foundation for later work on the problem behaviors themselves.

In the first several sessions, participants were taught to access and enhance a series of positive resource states using standard NLP submodality techniques. This submodality work begins with a striking enhancement of the remembered experience and so validates the first promise to clients--that they will be taught memory enhancement techniques. During the same several sessions, the participants are taught to focus more and more on the feelings associated with the experience so that they discover a series of deeply-pleasurable transcendent states. These pseudo-meditative states are designed partly to provide feelings of self efficacy, but also to provide powerful positive experiences that are strong enough to challenge the salience of the problem state.

Next, in sequence, the participants were taught to anchor several predefined states that they had accessed and enhanced during the preceding sessions. These states included the experience of focused attention, a single good decision made in a systematic fashion, a moment of skill consolidation or streamlining of a learned behavior—riding a bike, driving a stick shift, an experience of pure fun or enjoyment, and an experience of confidence or personal competence. These resources were enhanced to ecstatic levels—to the point where there was virtually no shadow of the original content or context. Each state was anchored to a distinct hand gesture. The anchors serve three purposes:

- 1 They make the resource transportable and accessible in multiple contexts,
- 2 They create a relatively mechanical means for evoking and enhancing the anchored state,
- 3 They create an automated access for later integration of these preliminary anchors into a more complex state (stacking anchors).

These five exemplars and the first level of stacked anchors were inspired by a set of anchors described by Carmine Baffa.

Once the anchors have been practiced and enhanced several times, participants were encouraged to practice them in multiple situations so that they generalize into other life contexts. This ensures that the new behaviors—access to the resource states—generalizes beyond the confines of the weekly session. A strong emphasis on homework and independent practice served the same end. Participants also created several of their own anchors to ensure that they knew that these processes were under their personal control; that the resource states were theirs and theirs alone.

At about the seventh week, the anchors were assembled into a single state labeled “NOW” which, according to the author’s understanding, created a basic felt experience (constellation) of Jung’s deep Self. This state was used as the affective basis for creating a meaningful and compelling set of outcomes in the last sessions when the NLP well-formedness conditions are used to create a future that matches the positive health outcome in Prochaska’s strong principle of change (Prochaska, 1994). It relies on his observation that movement through the stages of change is propelled most significantly by the identification of a meaningful and compelling future.

The process continued with the recollection and anchoring of a second series of resource

states from various periods in the participants' lives. These consisted of times when the participants felt good about themselves, things that they did well, things that they learned easily, meaningful jobs and roles, and things they wanted to be when they were children. These were anchored, enhanced and integrated into the NOW state.

Finally, the felt state associated with NOW is used to create well-formed outcomes across several life domains: home life, occupation, spiritual life, relationships, intellectual life, and health practices. Each outcome is created by accessing the NOW anchor and imagining life in each domain through that affective window. This results in future outcomes that are consistent with a deep, felt sense of personal identity. Superficial outcomes—wealth, sex, possessions etc. are discarded in favor of behavioral outcomes that characterize the kinds of behaviors that give expression to the constellated sense of the deep Self. The remaining exercises are devoted to enhancing the vision of the future and consolidating the learnings.

Methods

The study was undertaken after two years of Program operation (Gray, 2002). During that time it had graduated more than 200 participants. The program was 16 weeks long and met in a classroom format for two hours every week. Participants were required to attend two one-on-one sessions during the course of the program, and more if they returned a positive urine specimen or missed a group session.

The regular one-on-one sessions were undertaken to ensure that each participant had mastered the program skills up to that point in the program and to help them refine their technique. Persons who missed a session were brought in for make-up sessions. For persons who had submitted positive urine specimens, the techniques were reviewed and similarly refined. Some discussion of the problem was undertaken but the emphasis was always on the program

skills and ensuring that the participant had mastered them.

Population

The Brooklyn Program was a non-voluntary program operating under the aegis of the Federal Government in Brooklyn, NY. All Participants were court-mandated to substance use treatment. Clients were selected in a non-random fashion by their Probation Officers on the basis of convenience, perceived need, and often, financial constraints upon the department.

Participants were required to be fluent in English, not in active relapse and free from serious mental or psychiatric impairment. After a brief intake and introduction to the program, participants began with the formal exercises. Beyond these constraints, all referrals were usually accepted.

Although earlier sessions of the program had been limited to persons with marijuana-based problems and others who had been adjudged as being in need of an otherwise undefined *personal direction*, the study sample was a diverse group of offenders who were often using multiple substances.

The comparison group consisted of clients who had been removed from the program and were referred to the standard federal contract treatment protocol. Those clients received treatment from a contracted provider consisting of 2 sessions of group therapy and one individual counseling session per week over a period of six months (or more). The majority were removed from the program because they failed to attend the first two meetings. Others were terminated either for excessive absences or were removed by their probation officers.

Data collection was limited to program completion, urinalysis results before, during and after program completion and, later, PANAS data.

Informed consent

All clients were provided with and signed informed consent forms. Because of the possibility that some of the clients had poor literacy skills, the forms were read aloud to all participants.

The form documented the length and character of the program and advised: that the program satisfied the requirements set forth by the Court for substance use treatment, that the client had the option to choose other treatment modalities besides the Brooklyn Program, that enhanced program requirements or sanctions might follow upon evidence of relapse, that the program had mandatory attendance policies and conditions for removal to other treatment modalities, that the program was skill based and would be evaluated based on skill mastery, and that participants were required to participate in random urine testing. The consent included a notice of the non-confidential nature of program data and the fact that program results would be disclosed to the Probation Officer and to the Court. Finally, the form notified the client that the program involved altered states of consciousness accessed through visualizations and guided meditations.

Insofar as the program is not insight-based, or diagnostically driven, very little personal history was taken by the operators of the program.

Urinalysis

Preliminary urinalyses were performed in-house using REMIT equipment that was regularly calibrated according to Federal Government standards and subject to blind evaluations. Confirmation retests of positive specimens were performed by a contract agency using GC/MS testing. The equipment and procedures used by the contract agency were regularly recertified by federal inspectors. Strict chain of custody procedures were used to insure that every specimen would be admissible as evidence in a Court proceeding. Random weekly urine specimens were

collected every week from each participant. The policy of the Federal Probation Department required weekly urinalyses of all offenders for whom drug treatment had been mandated. This regimen began before they entered drug treatment and continued after completion. Urine specimens were scheduled using a random call generator which averaged one call per client per week while in practice it could more or less frequent.

Evaluation Criteria

One of the important characteristics of the program was the inclusion of behaviorally defined success criteria which were evaluated during the two one-on-one sessions. If behavioral deficits were noted, measures were taken during additional one-on-one sessions, to correct the problems.

There were seven behavioral criteria. Early in the program participants might legitimately have had trouble creating truly automatic anchors. So provisions were made to coach participants on anchoring during the first one-on-one. However, if by the first one-on-one session, a participant could not meet the first three criteria this was understood as a sign of non-participation. If participants remained unable to meet the root criteria after the eighth session they were instructed to repeat the program or to seek another form of treatment.

- 1) Name the five states and illustrate the appropriate hand gestures; do this in order (Exercises 2 and 3).
- 2) Describe your physiological responses as the state arises (Exercises 1-5 and throughout the program).
- 3) Physiological signs: Changes in posture, facial expression, heart rate, breathing and skin tone. Many participants will begin to express rhythmic movements that reflect the underlying experience. Although they differ from person to person,

state changes will be observable.

- 4) Response latency: Persons who have entered the deep states required will either not respond to external stimuli (loud noises) or will respond with marked latencies (e.g., eye movements several seconds after the sound)
- 5) Perseveration: Persons who access the states often take a few seconds to return to normal consciousness. Persons who immediately return to normal voice tone and reaction time are suspect.
- 6) Mood change: The state enhancement and anchoring exercises (1-5) and all of the subsequent exercises lead to strong positive feelings. People who begin the session in negative states quickly change to more positive affects. Persons who retain a negative mood are suspect.
- 7) States arise automatically in response to the anchors; there is no preparation time or conscious effort to access the state.

Results

Statistical measures

Statistical measures were provided by an outside contractor who created an SPSS (Statistical Package for Social Sciences) file based upon data elements collected during approximately one year of treatment (n=127). Twenty-eight records were removed because of ambiguous or missing data. This left 99 valid cases with observable measurements (urinalysis results).

Of the ninety-nine valid cases, eighty (80.8%) were program graduates. A total of nineteen (19.2%) were non-graduates, two of whom had been excluded from the program (failed

to attend the four initial sessions). Pre- and post- urinalysis data were available for the two excluded cases, so they were grouped with the comparison group for analysis.

Analyses of variance for several conditions were performed with no significant differences appearing between completers and non-completers whether or not positive specimens had been submitted before treatment.

Fifty-five percent of Brooklyn Program graduates remained abstinent after completing the program. Roughly one-third (32.5%) of those who submitted positive urinalyses were determined to be in need of further treatment. Among non-graduates, 16 percent remained abstinent and 68.4 percent of the remainder was determined to be in need of further treatment. Group differences in the mean number of positive urinalysis results submitted after graduation failed to be statistically significant at either the .01 or .05 percent levels.

Among participants with documented drug use prior to the program (n=47), 70.3 percent of graduates (n=37) submitted positive urine specimens, and slightly more than half of those (51.4%) were determined to need further treatment after graduation. The ten non-graduates all submitted positive urinalyses and eighty percent were determined to need further treatment. The difference in the mean number of positive urine specimens submitted by graduates and non-graduates after program completion failed to be statistically significant at either the .01 or .05 levels.

Several other variables, including treatment history and the timing of the last positive specimen submitted before graduation, revealed no significant correlations with the need for further treatment. Several of these calculations involved such a small number of cases that the analysis could not be made.

Other measures

After the original evaluation in 2002, an effort was made to provide more objective measures of positive affect and program effectiveness. Among those changes was the implementation of a testing regimen including administering the PANAS inventory to each participant in pre-treatment and post-treatment conditions. The PANAS is an affect inventory that tests the level of 20 independent, non-correlated feeling states (Watson, Tellegen & Clark, 1988). PANAS can be administered so as to examine several time frames to assess current mood or more stable affect characteristics. Watson et al. normed the instrument against several thousand college students and found that their scores averaged 32 on the positive scale and 16 on the negative with a standard deviation of 7 points for the entire instrument.

PANAS Results for Two Groups: Affect Frequency for One Month Pre-test						
		Positive		Negative		sd
	N	Total Score	Mean score	Total Score	Mean Score	
Normative data PANAS			32		16	7
Post Tx	44	1818	41.318	653	14.84	
Pre Tx	62	2042	32.93	1172	18.90	

The PANAS was administered to two groups in 2004. Our results showed an increase of positive affect after treatment that was considerably higher than the pre-treatment scores. Although no SD was computed for the study group, the measured change was more than one standard deviation as computed for the norming group. The negative affect scales decreased post treatment but remained at about normal levels. Before treatment, positive affect was typically one full standard deviation below the mean of the norming population for all participants. This change is taken to mean that although more positive, the program completers were not unrealistic.

Personal responses to the program were consistently positive. Participants reported changes in spiritual awareness and positive direction. They claimed to have reconnected with their positive pasts and had developed meaningful positive directions.

Discussion

This paper reviewed an NLP-based program for substance abusers that operated in the United States Probation Department for the Eastern District of New York between 1997 and 2004. Based on a learning model of substance abuse and seeking to capitalize on the personal strengths of the participants, the program was characterized by high rates of retention and low relapse rates.

Descriptive statistics indicated that 80 percent of enrollees completed treatment and of those, 55 percent remained drug free. When the results were narrowed to reflect only graduates who had submitted positive urine specimens before program initiation, the abstinence rate stabilized at a respectable 29.6 percent. Although not statistically significant, the success rate matches the success of more time-consuming and expensive treatment options.

The Brooklyn Program has taken the radical stance that substance abuse and addiction are not diseases so much as they are learned strategies for dealing with problems which, in the course of normal learning, become the definers of reality for the client. In choosing to focus on accessing positive resources, developing choice and creating a future orientation, the Brooklyn Program has achieved results that are as good as and often better than standard, problem-centered approaches. In the course of creating those results it has manifested a significant savings of time and energy over standard treatment modalities

Standard contract treatment in the Federal Probation System typically consists of 2 group therapy sessions and one individual counseling session per offender, per week. The basic treatment period is six months (often more). In 1999, the year the original population graduated, costs for these services ranged between \$150 and \$175 per week and amounted to \$3600 per offender over the course of a six month evaluation period. By contrast, the Brooklyn Program

operated with in-house personnel and required a maximum of 4 hours per facilitator, per week. Using only the number of program completers who required no further treatment (n=62) the Brooklyn Program produced savings of more than \$200,000 for the population of offenders examined.

Later examinations of the affective results of the program using the PANAS inventory, indicated that program completers showed a considerable shift in mood along a positive affective dimension while remaining pragmatic about the negative realities of their lives.

Directions for Further Research

The program developed from an understanding of human potentials rooted in Jungian and Maslowian concepts of personal growth. It built upon these assumptions using concepts drawn from classical conditioning and NLP to create a program of experience in personal growth that provided results that are at least as good and often better than more expensive and time consuming programs.

One of the important effects of the program is an illustration of the efficacy of NLP in allowing clients to directly regulate their subjective states by creating and modifying specific affective tones and by creating and enhancing specific states of mind.

Richard Davidson and others have implicated the Orbito-Frontal cortex as an important element in processing positively valenced affect and as an essential element in the direction of goal directed behavior (Davidson, 1993; Kringleback, 2005). Likewise, Berridge, Robinson and others have described the activation of the ventral striatum in the ordering of behaviors related to addiction (Berridge & Robinson, 2003). It would be instructive to compare fMRI recordings of frontal function and activity in the ventral striatum in persons who have completed the Brooklyn Program with other substance abusers or dependant persons who have not learned the self regulatory practices that are at the heart of the program. We would predict that left orbito-frontal activity levels would increase over untreated controls and that activity in the ventral striatum would decrease in the presence of drug-related stimuli. These would represent reversals of the common patterns observed in substance use disorders.

The program would also profit from continued application of objective measures like the PANAS inventory. Moreover, those evaluations should continue for follow-ups for several years.

There is significant evidence suggesting that relapse and recidivism peak at two years post-treatment (MacKenzie, 2006). In light of this, future studies should follow participants well beyond the one year level.

Finally this program points directly to the relevance of the tool sets derived from NLP and their capacity to ameliorate substance use disorders using simple behavioral techniques. This is a field ripe for study and should not be overlooked.

Limitations of the study.

This study suffers from several limitations. Although the procedure was manualized and applied consistently, the evaluation design lacked the scientific rigor that would have rendered the results more reliable and would have insured their validity.

To begin, the study lacked random assignment to experimental and comparison groups and further suffered in that it used program drop-outs for the comparison group. These errors, significantly impact the validity of the results presented. Future studies would ideally use random assignment to the two groups. Insofar as the participants were assigned to the program using arbitrary criteria (Probation Officer's decision processes) these results may not generalize to a larger population.

Because the study was based on an essentially ad hoc review of an up-and running program, there was, beyond completion statistics, urinalysis results and the lately-come PANAS testing, little in the way of useful data collected. The data was not analyzed for the impact of different drugs, different levels of substance use disorders or demographic factors. These should all be included in later replications.

In general, however, the program provides a perspective into the effective use of NLP practices in a drug treatment setting. Further research will provide continued validation of these approaches using more rigorous scientific designs.

References

- Andreas, Connirae & Andreas Steve. 1988. *Change Your Mind and Keep the Change*. Moab, UT: Real People Press.
- Andreas, Connirae & Andreas Steve. 1989. *Heart of the Mind*. Moab, UT: Real People Press.
- Bandler, Richard & MacDonald, Will. 1987. *An Insider's Guide to Submodalities*. Cupertino, CA: Meta Publications.
- Bandler, Richard & Grinder, John. 1975. *The Structure of Magic I*. Cupertino, Calif.: Science and Behavior Books.
- Bandler, Richard & Grinder, John. 1979. *Frogs into Princes*. Moab, UT: Real People Press.
- Bechara, Antoine. (2005). Decision making, impulse control and loss of willpower to resist drugs: a neurocognitive perspective. *Nature Neuroscience*, 8(11), pp 1458 – 1463.
- Berridge, K. C. & Robinson, T. E. 2003. Parsing reward. *Trends in Neurosciences*, 26(9), 507-513.
- Bostic St Clair, Carmen & Grinder, John. 2002. *Whispering in the Wind*. Scotts Valley, CA: J & C Enterprises.
- Damasio, A. R. 1999. *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. New York: Harcourt.
- Davidson, Richard J. 1993. Parsing Affective Space: Perspectives From Neuropsychology and Psychophysiology. *Neuropsychology*, 7(4), 464-475.
- Dilts, R., Grinder, J., Bandler, R. & DeLozier, J. 1980. *Neuro_Linguistic Programming: Volume I. The Structure of Subjective Experience*. Cupertino, CA: Meta Publications.
- Dilts, R., DeLozier, J. A. & DeLozier, J. 2000. *The Encyclopedia of Systemic Neuro-Linguistic Programming and NLP New Coding*. Scotts Valley, CA: NLP University Press. Retrieved at www.nlpu.com

- Edinger, Edward F. 1972. *Ego and Archetype*. New York: Penguin.
- Erickson, M. H. 1954. Pseudo-Orientation in Time as an Hypno-therapeutic Procedure. *Journal of Clinical Experimental Hypnosis*, 2 261-283. In Milton Erickson and L. L Rossi (Ed.) *The Collected Papers of Milton H. Erickson on Hypnosis: Vol. IV. Innovative Hypnotherapy*. NY: Irvington. 1980.
- Gray, Richard M. 1996. *Archetypal Explorations*. London: Routledge.
- Gray, Richard M. 2001. Addictions and the Self: A Self-Enhancement Model for Drug Treatment in the Criminal Justice System. *The Journal of Social Work Practice in the Addictions*. vol. 2, No. 1.
- Gray, Richard M. 2002. The Brooklyn Program: Innovative Approaches to Substance Abuse Treatment. *Federal Probation Quarterly* vol. 66. no.3. December 2002.
- Gray, Richard M. 2005. *Thinking About Drugs and Addiction*. Boulder CO: NLP Comprehensive. <http://www.nlpcomprehensive.com/articles/AddictionsGray.html>.
- Gray, Richard M. 2008. *Transforming Futures: The Brooklyn Program Facilitators Manual*. Lulu.com. <http://www.lulu.com/content/2267218>
- Gray, Richard M. 2008a. NLP and Levels of Motivation. *Suppose, the Official CANLP/ACPNL Bilingual Newsletter*. Fall 2008, pp. 20-24.
- Hillman, James. 1983. *Archetypal Psychology: A Brief Account*. Dallas, TX: Spring Publications.
- Hillman, James. 1996. *The Soul's Code: In Search of Character and Calling*. NY: Random House.
- Kringelbach, Morten L. 2005. The Human Orbitofrontal Cortex: Linking Reward To Hedonic Experience. *Nature Reviews: Neuroscience*, 6, September 2005, P. 691.
- Lewis, Byron & Pucelik, Frank. 1990. *Magic of NLP Demystified*. Portland, OR: Metamorphous

Press.

MacKenzie, Doris Layton. 2006. *What Works in Corrections: Reducing the Criminal Activities of Offenders and Delinquents*. NY: Cambridge University Press.

Maslow, Abraham. 1970. *Religions, Values, and Peak Experiences*. NY: The Viking Press.

O'Connor, Joseph & Seymour, John. 1990. *Introducing NLP*. London: Element.

Prochaska, J. O. 1994. Strong and weak principles for progressing from precontemplation to action on the basis of twelve problem behaviors. *Health Psychology*, 13, 47-51.

Prochaska, James O; Norcross, John C.; & DiClemente, Carlo C. 1994. *Changing for Good*. NY: William Morrow.

Schultz, W. 2002. Getting Formal with Dopamine and Reward. *Neuron*, vol. 36, No. 1. September 26, 2002.

Watson, D., Clark, L. A. & Tellegen, A. 1988. Development and validation of brief measures of positive and negative affect: the PANAS scales. *J Pers Soc Psychology*, 54:1063-70.

Zoja, Luigi. 1990. *Drugs, Addiction & Initiation: The Modern Search for Ritual*. Gloucester, MA: Sigo.